

NIEHS scientists join other volunteers to teach children about nutrition

Thanks to volunteers from NIEHS and public service groups, six children in a Durham, N.C., program learned important lessons about healthy lifestyle and diet.

NIEHS scientists Sharon Beard and Elena Braithwaite, Ph.D., joined fellow members of the Durham Alumnae Chapter of Delta Sigma Theta [Sorority](http://www.dst-durhamalumnae.org/), (<http://www.dst-durhamalumnae.org/>) as well as volunteers from the Durham Alumni Chapter of Kappa Alpha Psi [Fraternity](http://www.bullcitykappas.com/) (<http://www.bullcitykappas.com/>) and the Durham Chapter of the [Links Inc.](http://www.durhamnclinks.org/index.html) (<http://www.durhamnclinks.org/index.html>)

Children living temporarily at [Genesis Home](http://genesishome.org/), (<http://genesishome.org/>) a nonprofit organization that works to end homelessness for families with children, participated in a hands-on science lesson Dec. 2 about the importance of fruits and vegetables, a healthy diet, and exercise. The lessons included some graphic illustrations, such as one involving cans of regular soda, which sank in water because of the density of the 30-50 grams of sugar they contain, and cans of diet soda, which floated because of their lower sugar content, weight, and density.

Why is diet so important?

Childhood obesity rates in America have tripled in the past thirty years and today, in the U.S., approximately 30 percent of all children, and 40 percent of African-American and Hispanic children, are overweight or obese. Since obesity can lead to numerous health complications, including diabetes, heart disease, high blood pressure, cancer, and asthma, it is important to try to reverse this trend. Some factors that contribute to the increase in obesity rates among children are diet, portion size, and lack of exercise.

Beard started the discussion by talking about the five food groups that serve as the [building blocks](http://myplate.gov/food-groups/) (<http://myplate.gov/food-groups/>) for a healthy diet. In her presentation, she emphasized the importance of consuming a variety of fruits and vegetables.

As Beard said, "Teachable moments like these are essential to help eliminate minority health disparities, as children learn in a fun environment. We hope they will internalize these healthy concepts. Evidence indicates that ingestion of at least 2 1/2 cups of fruit and vegetables per day is associated with a reduced risk of cardiovascular disease."



The children, who may not have associated sugar in soda with weight before, certainly did after this graphic illustration. (Photo courtesy of Renaldo Dorsey)



Braithwaite is a regular volunteer in the Durham Alumnae Chapter of Delta Sigma Theta Sorority Science and Everyday Experiences (SEE) summer camp held each year in Durham, N.C. (see [story](#)). She is a staff scientist in the NIEHS Comparative Genomics Group and has also volunteered in the Citizen Schools program.

However, Beard noted, according to the [CDC's 2013 State Indicator Report on Fruits and Vegetables](http://www.cdc.gov/nutrition/downloads/State-Indicator-Report-Fruits-Vegetables-2013.pdf),
(<http://www.cdc.gov/nutrition/downloads/State-Indicator-Report-Fruits-Vegetables-2013.pdf>) more than 40 percent of adults and adolescents in N.C. consume less than one helping of fruits and vegetables each day. She said it continues to be important to remind the general public of this nutritional recommendation.

Bringing the healthy diet message up close and personal

Braithwaite continued the discussion by teaching the participants about nutrition labels and healthy food options, and emphasized the importance of exercise. Students calculated the total calories in a typical meal they would order for lunch from popular fast food restaurants. Many were surprised to see that this one meal contained almost half the calories they should consume in an entire day.

To encourage a balanced and nutritious diet, Braithwaite led a discussion of healthy alternatives for popular items and emphasized the importance of exercise. The students then joined in an exercise where they were asked to do jumping jacks for one minute.

"Many of the participants were surprised to see [how much exercise](http://fatburn.com/free_tool_activity_burn.asp) (http://fatburn.com/free_tool_activity_burn.asp) is required to equal the number of calories in a serving of tomatoes on a sandwich," said Braithwaite, who noted that inactivity is also a big problem in N.C. According to the [CDC's 2013 State Indicator Report on Fruits and Vegetables](http://www.cdc.gov/nutrition/downloads/State-Indicator-Report-Fruits-Vegetables-2013.pdf), (http://www.cdc.gov/nutrition/downloads/State-Indicator-Report-Fruits-Vegetables-2013.pdf) by the United Health Foundation, 24.9 percent, or approximately 1.8 million, adults in N.C. are physically inactive, and 29.6 percent are estimated to be obese.

"Our hope is that this knowledge will assist the participants in making better nutritional choices and promote a healthier lifestyle," Braithwaite said of the program.



Beard is the coordinator of her sorority's SEE camp each summer. At NIEHS, she is a program manager and industrial hygienist in the Worker Education and Training Program. (Photo courtesy of Steve McCaw)

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